

Names: [250]

Keagan, Ronald | Hintin, Deanne | Spector, Leonard |
Khan, Abdul Qadeer | Juneja, Mohammad Khan | Glenn, John |
Perle, Richard | Peck, Robert | Murphy, Richard | Solarz, Stephen |
~~Leach~~ | ~~Fascell~~ | Zia ul-Haq | Bhutto, Zulfikar Ali |
Yagub-Khan, Sahibzade | Sattar, Abdul | Waheed, Abdul |
Noorani, Zain | Swaran, Venkatesh | Gandhi, Rajiv

PROPERTY OF
THE NATIONAL SECURITY ARCHIVE

Order Code IB86110

PAKISTAN AND NUCLEAR WEAPONS

Updated July 22, 1987

by

Warren H. Donnelly

Environment and Natural Resources Policy Division

Congressional Research Service

CONTENTS

SUMMARY

ISSUE DEFINITION

BACKGROUND AND ANALYSIS

Background

Fissionable Materials and Nuclear Weapons

Pakistan's Nuclear Weapons Status

Pakistan's Nuclear Base

Political Non-Proliferation Status

International Non-Proliferation Commitments

Official Statements on Nuclear Weapons

Some Suspicious Nuclear Activities

Analysis

Factors Affecting Pakistan's Decision On Whether To Make Nuclear Weapons

Relations With India

Possible Cutoff of U.S. Aid

Other Factors

CHRONOLOGY

FOR ADDITIONAL READING

PAKISTAN AND NUCLEAR WEAPONS

SUMMARY

The spread, or proliferation, of nuclear weapons has long been viewed as a threat to U.S. security and to global stability. Nuclear proliferation could complicate U.S. defense planning and increase the chances of nuclear weapons being seized by terrorist groups. Some fear that the use of nuclear weapons in a local conflict might bring the superpowers into direct nuclear conflict.

Pakistan continues to inch towards an ability to make nuclear bombs, although the unclassified literature does not indicate it has either tested or made them. President Reagan has twice certified to Congress that Pakistan has no nuclear explosive devices. However, on Feb. 16, 1987, U.S. Ambassador Hinton in Islamabad warned Pakistan about nuclear activities inconsistent with a purely peaceful program and cautioned that "it is open to question whether the President could so certify were he to conclude that Pakistan had in hand, but not assembled, all the needed components for a nuclear explosive device" (U.S. Dept. of State). Recent charges of attempts to illegally export certain nuclear related items to Pakistan have generated opposition in Congress to further Pakistani aid without a strong and verifiable commitment to stop its attempts to produce weapons grade uranium.

Pakistan is probably almost able to make enough material for a nuclear explosive. Some think Pakistan could do this in a few years; others say this capability is imminent. Whether or not Pakistan takes this step is another question. If Pakistan were able to make nuclear weapons light enough and suitable for delivery by aircraft, it has U.S. F-16s and French Mirage aircraft that could deliver them.

ISSUE DEFINITION

Many claim that Pakistan can now or will soon be able to produce weapons grade uranium, raising concerns that Pakistan may decide to make nuclear weapons. This would be a reverse to the United States' policy of avoiding the further spread, or proliferation, of nuclear weapons. Furthermore, the President's authority to supply military and economic assistance to Pakistan expires on Sept. 30, 1987. A controversial issue is the nature of Pakistan's nuclear activities and what the United States could do to keep Pakistan from making nuclear bombs.

This brief tracks Pakistan's nuclear activities during the 100th Congress with attention to statements and actions by Pakistan and the United States. It is one of a series on the proliferation situation for certain states. A companion brief addresses non-proliferation conditions for future U.S. aid to Pakistan (IB87148).

(NOTE: For a discussion of the full range of issues affecting U.S.-Pakistan relations, see CRS Issue Brief 85112, U.S. Assistance to Pakistan: Foreign Aid Assistance Facts, by Richard P. Cronin.)

BACKGROUND AND ANALYSIS

Background

Whether or not a nation can build a nuclear weapon now or in the future depends upon its nuclear industrial base and its ability to import material from other states. To seek a nuclear weapons capability is a political decision, based on a nation's calculations of the effect of nuclear weapons on its security and on its relations with other states. Non-proliferation commitments made in treaties and public statements provide one indication of a nation's nuclear intentions, although public posture and actual intentions may differ.

Nuclear Weapons Materials

It is generally accepted that the conceptual design of a nuclear bomb is within the capabilities of most nations, although translating a concept into a detailed workable design is much more complicated. And it is difficult to obtain either uranium or plutonium of sufficient quantity and quality to make nuclear weapons.

Natural uranium contains less than 1% of U-235, the isotope which is readily fissionable. Most of natural uranium is comprised of less fissionable U-238. In order to be usable in nuclear weapons as well as in most power reactors, uranium must be "enriched" to obtain a higher concentration of U-235. For most nuclear power reactors, uranium must be enriched to about 3% U-235; for weapons use, uranium must be 90% U-235 or greater.

Plutonium as well as uranium can be used to make a nuclear explosive as well. It also can be mixed with uranium to fuel some types of power

reactors. Plutonium is a man-made material -- it does not occur in nature. It is formed in a nuclear reactor when U-238 atoms capture neutrons. The plutonium is separated from residual uranium and fission products by chopping up the irradiated uranium, dissolving it in strong acid, and separating out the plutonium. There are different qualities of plutonium. Weapons grade has less than 6% of the isotope Pu-240.

Pakistan's Nuclear Weapons Status

Pakistan continues to inch towards an ability to make nuclear bombs, although the unclassified literature does not indicate it has either tested or made them. President Reagan has twice certified to Congress, under Section 620E of the Foreign Assistance Act -- as amended by Section 902 of P.L. 99-83 -- that Pakistan has no nuclear explosive devices. However, on Feb. 16, 1987, U.S. Ambassador Hinton in Islamabad warned Pakistan about nuclear activities inconsistent with a purely peaceful program and cautioned that "it is open to question whether the President could so certify were he to conclude that Pakistan had in hand, but not assembled, all the needed components for a nuclear explosive device" (U.S. Dept. of State). Nuclear analyst Leonard Spector reported a consensus that Pakistan is at the nuclear-weapons threshold: "It either possesses all of the components needed to manufacture one or several atom bombs or else remains just short of this goal because its uranium enrichment plant at Kahuta has not yet produced a sufficient quantity of nuclear-weapons-usable highly enriched uranium (Going Nuclear, p. 101).

On Mar. 1, 1987, the London Observer quoted an interview with Dr. A. Q. Khan, head of Pakistan's nuclear activities, as saying, in effect, that Pakistan had the nuclear bomb. This was vigorously denied.

Pakistan's Nuclear Base

Pakistan has one small nuclear power plant (the 125 MWe Kanupp unit) and a small research reactor (SMWR). Both are under safeguards of the International Atomic Energy Agency (IAEA). (The IAEA is a specialized agency of the U.N. formed in 1957 and is responsible for verifying through inspections and material accounting that nuclear materials and equipment intended for peaceful use are not diverted to military purposes.) Efforts to solicit bids for construction of a 900 MWe plant have been unsuccessful.

Enrichment

In the mid-1970s, Pakistan began efforts to buy enrichment and reprocessing plants, neither of which is necessary for its current or planned use of nuclear power. Pakistan's enrichment plant at Kahuta was built using technology, equipment, and materials obtained secretly from a number of European countries and with plans and information obtained surreptitiously by a Pakistani scientist working in the Netherlands. Kahuta's operation is secret and it is not open to IAEA inspection. The Administration has voiced "very serious concerns" about Pakistan's unsafeguarded nuclear facilities, raising this issue repeatedly (The Washington Post, Nov. 5, 1986: A29). In Washington in July 1986, Pakistani Prime Minister Mohammed Khan Junejo confirmed in an interview

that Pakistan had pledged, in response to a September 1984 letter from President Reagan, not to enrich uranium to more than 5% (The Washington Post, Nov. 5, 1986: A29). Public sources do not indicate what quantity or quality of enriched uranium the Kahuta plant can produce. If Pakistan can produce kilograms of uranium enriched to 90% U-235 or more, Pakistan would have a source of weapons grade material. On Mar. 27, 1986, The Economist Foreign Report said Pakistan had succeeded in enriching uranium beyond 30%. This report has not been confirmed, and State Department officials were unwilling to comment publicly on it.

In November 1986, according to "authoritative sources," intelligence reports show that Pakistan had enriched uranium to 93.5%, although the news report did not say how much had been produced (The Washington Post, Nov. 4, 1986: A1; also Nov. 5, 1986: A29). The State Department declined to comment on these "alleged intelligence reports."

Also, in March 1987 Dr. A. Q. Khan was quoted as saying Pakistan was producing weapons grade uranium. Senator Glenn in a hearing of the Senate Committee on Government Affairs on March 5, 1987, raised the issue of Pakistan's situation with Assistant Secretary of Defense Richard Perle, and said he was writing to President Reagan urging suspension of military assistance to Pakistan until a thorough review has been completed, with aid not to resume until the President certifies that he has received reliable assurances from Pakistan that they have ceased producing nuclear weapons materials. Mr. Perle in commenting on the Khan interview said he had no definitive information this was so. He cautioned that termination of U.S. aid should be a sanction of last resort. Also on March 5, Deputy Assistant Secretary of State Robert Peck testified to the House Committee of Foreign Affairs, Subcommittee on Asian and Pacific Affairs, that while Pakistan appears to have acquired much of what is needed for nuclear weapons, the U.S. assessment remains that it does not possess a nuclear explosive device and that U.S. assistance reduces significantly the risk that Pakistan will do so (prepared statement). However, he said that the United States could no longer obtain "reliable assurances" from Pakistan that it has stopped producing nuclear explosive materials (New York Times, Mar. 15, 1987: 3).

Following reports in mid July of attempts to illegally export a special steel alloy from the United States to Pakistan (see Chronology), two subcommittees of the House Committee on Foreign Affairs held a hearing on this matter. Assistant Secretary of State Richard W. Murphy testified that the Reagan Administration is asking Pakistan to reduce the degree of its uranium enrichment and to permit outside inspection. This proposal is part of the "concrete evidence of Pakistani nuclear restraint" sought as a central objective to U.S. policy. According to subcommittee chairman Solarz, the ideal solution is an agreement with Islamabad that would give the United States confidence that Pakistan is not producing highly enriched uranium and that would permit a continuation and deepening of the U.S. Pakistani partnership. But without such an agreement, "we would have no alternative but to insist that the law in all its provisions be faithfully carried out" (i.e., to cut off aid). On the other hand, Representative Leach cautioned against a precipitous cut-off as endangering Western security and Afghan resistance and as almost certain to prove counterproductive for nonproliferation policy: "Pakistan would

have no choice except to develop pell-mell a nuclear deterrent." Committee Chairman Fawcett also wrote to President Reagan to propose suspension of military aid to Pakistan until the two countries can resolve the issues raised (The New York Times, July 23, 1987: A6).

Plutonium

Pakistan is reportedly trying to complete construction of two reprocessing plants, one located at Rawalpindi and the other at Chashma. The plant at Rawalpindi would be capable of producing 10-20 kg of plutonium per year, theoretically enough for about two weapons annually. The Chashma plant is much larger, with a reported capacity of 100 to 200 kg of plutonium per year. Although this plant was begun by a French company, the French stopped work under the contract in 1978 under U.S. pressure; and Pakistan has made little progress in completing this plant since then. Recent news reports indicate that Pakistan is trying to get France to resume construction (Nucleonics Week, June 4, 1987: 11; Nuclear News July 1987: 58). During a visit to Islamabad, the French Minister for Foreign Affairs said that once the dispute is settled, France will be ready to consider possible nuclear power cooperation with Pakistan (French Embassy). At present, Pakistan has no industrial scale capacity to separate plutonium.

Political Non-Proliferation Status

International Non-Proliferation Commitments. Pakistan is not a signatory of the Non-Proliferation Treaty (NPT) and has neither pledged to forewear acquisition of nuclear weapons nor to agree to verification through international inspection. Pakistan has said it will sign the NPT if India does. India, however, has stated it will not sign unless the nuclear weapons states disarm. Since 1974, Pakistan has proposed at the UN a nuclear-weapon free zone in South Asia, although here again India has rejected the proposal, arguing that China should be included. On June 16, 1987, Pakistan's foreign minister called for a regional non-proliferation treaty (Nucleonics Week, July 2, 1987: 11).

Pakistan is a member of the IAEA and in 1986 was elected to its board of governors for a 2-year term. Pakistan has accepted IAEA inspection on its power and research reactors. If its reprocessing plants become operational, they would be safeguarded when processing spent fuel from safeguarded reactors. An agreement between Pakistan, France, and the IAEA to safeguard the Chashma reprocessing plant at all times has been concluded but is not yet in force. The smaller reprocessing plant since it was based on replicated technology, may also be covered under this agreement when it is completed, although this is not certain. Pakistan does not allow any inspection of its enrichment plant. It has proposed mutual inspection of Indian and Pakistani nuclear facilities, but India has said that such inspections would not be sufficient to verify that Pakistan was not making nuclear weapons.

Official Statements on Nuclear Weapons. Pakistani officials have said many times that Pakistan is not attempting to develop nuclear weapons. For example, on Oct. 21, 1985, President Zia was quoted in the New York Times as saying: "Pakistan has neither the resources nor the

means nor the desire" to develop a nuclear weapon. In July 1984 President Zia stated: "Pakistan has the capability to enrich uranium but it would never use that capability for any purpose other than peaceful ones" (The Pakistan Times, July 13, 1984, p.1). Dr. A. Q. Khan, head of Pakistan's enrichment program, reportedly said in May 1984 that it was "theoretically" possible for Pakistan not only to manufacture atomic bombs but also hydrogen bombs. However, he emphasized that Pakistan's enrichment program was purely for peaceful purposes and was meant to meet the country's energy requirements (Lahore, Nawa-I-Waqt, Feb. 10, 1984: F1-F8). On Feb. 10, 1984, the New York Times reported Mr. Kahn had said in an interview that his country could enrich uranium and intimated that Pakistan could produce a nuclear weapon if necessary: "If in the interest of the country's solidarity the president of Pakistan were in extreme need and gave the team of scientists an important mission, it would not disappoint the nation" (New York Times, Feb. 10, 1984: A4). These are typical of statements from Pakistan.

Other Suspicious Nuclear Activities

Although Pakistani officials continue to disavow any interest in nuclear weapons, some of Pakistan's activities over the past 10 years suggest that it has been trying to achieve at least a capability to make them. In 1972 then Prime Minister Bhutto reportedly met with about 50 Pakistani scientists and expressed his desire that the country develop a nuclear weapon capability (The Birth of the Islamic Bomb, New York Times, Special Feature, June 15, 1980).

According to some news accounts, Pakistan already has obtained many of the non-nuclear components for a nuclear weapon (U.S. Hinders Pakistan's Bomb Plans. Why Pakistan May Not Need to Test a Nuclear Device. Simon Henderson, Financial Times, Aug. 14, 1985). In 1982 Pakistan purchased a flash x-ray machine from Sweden, and in 1985 two employees of Pakistan's Atomic Energy Commission attempted to get training in the United States in its use. These machines can be used to take split-second photographs through solid materials and can be used to test the design of key parts of a nuclear weapon.

On June 24, 1984, the New York Times reported allegations that China had provided Pakistan with the design of a nuclear weapon China had exploded in one of its nuclear tests. There have also been unconfirmed reports that China allowed Pakistan to observe one of its nuclear tests (New York Times, June 22, 1984). In July 1984, three Pakistanis were arrested for attempting to illegally export from the United States 50 high-speed electronic switches, called krytrons, for Pakistan's Atomic Energy Commission. One use for krytrons is in nuclear weapon detonators. In August 1984 a Pakistani press agency announced that a research laboratory had succeeded in purifying graphite to over 90%. Pure graphite can be used in plutonium production reactors. However, the head of Pakistan's Atomic Energy Commission said the graphite purification program was not related to Pakistan's nuclear program.

On July 11, 1985, ABC News, citing unidentified intelligence sources, reported that Pakistan had successfully tested the non-nuclear parts for a nuclear weapon trigger. Adding to these suspicions is a report from West

Germany, May 4, 1987, that the Cologne prosecutors office has begun to investigate Leybold-Heraeus, a West German company suspected of illegally exporting to Pakistan parts for a uranium enrichment plant (New York Times, May 5, 1987: A8). Two more recent cases are the indictments in July 1987 of a Canadian -- of Pakistani origin -- for attempting to illegally export a specialty steel (maraging steel) to Pakistan, presumably for use in making centrifuges; and indictment of several business men for illegally exporting certain electronic equipment to Pakistan during 1982-1983 (see Chronology for details).

Analysis

Factors Affecting Pakistan's Decision On Whether To Make Nuclear Weapons

Relations With India. Pakistan's nuclear program has been significantly influenced by competition with India. Pakistan and India have fought three wars since India gained its independence in 1947. Pakistan suffered a major defeat in the 1971 war, resulting in the creation of the separate nation of Bangladesh in territory that had been east Pakistan. Border skirmishes in the Kashmir region continue. When India began a nuclear program in the late 1950s, some Pakistani leaders said that Pakistan should match India's efforts. In 1966, for example, then Foreign Minister Bhutto said that if India produced a nuclear bomb Pakistan would follow suit, even if Pakistanis had to "eat grass" to do so. Pakistan's nuclear activities were accelerated after the 1971 war with India. However, India's nuclear program has been far ahead of Pakistan's since the 1960s, and in 1974 India exploded a nuclear device. One reason Pakistan may want to remain close to a nuclear weapon capability is to provide a hedge against Indian production of nuclear weapons. A widely held view in Islamabad is that it would be better if both Pakistan and India had nuclear weapons than if only India had them.

While competition with India may give Pakistan an incentive to strive for a nuclear weapon capability, it may also give Pakistan reason not to test or perhaps even assemble a weapon. Indian officials have indicated that if Pakistan tests a nuclear device, India will resume its own nuclear testing. Since India has a more advanced nuclear industrial base and greater access to weapons-grade nuclear material, it is quite doubtful that Pakistan could hold its own in a nuclear arms race with India. For this reason, it seems likely that Pakistan would prefer an ambiguous position regarding its nuclear program and intentions.

Possible Cutoff of U.S. Aid. Another reason for Pakistan not to conduct a nuclear test or assemble a weapon, at least openly, is that to do so could cause the United States to cut off economic and military aid to Pakistan. (Any significant U.S. cooperation with Pakistan in peaceful nuclear energy is already prohibited under the Atomic Energy Act because Pakistan will not accept statutory conditions on U.S. nuclear exports, notably international inspection on all nuclear facilities.) Given Pakistan's current dependence on the United States for military and economic aid, such a cutoff would have severe consequences for Pakistan's security. Pakistan is currently the fourth largest recipient of U.S. aid, after Israel, Egypt, and Turkey.

The United States previously has cut off aid to Pakistan because of its nuclear activities. In 1979 all U.S. economic and military aid to Pakistan was terminated under Section 669 of the Foreign Assistance Act of 1961 because of Pakistan's attempts to acquire enrichment technology. The Soviet invasion of Afghanistan in 1979 caused a shift in U.S. priorities in its relations with Pakistan. In December 1981 a new Section 620E was added to the Foreign Assistance Act of 1961 that allows the President to waive Section 669 in order to provide assistance to Pakistan "if he determines that to do so is in the national interest of the United States." This cleared the way for implementation of a six-year, \$3.2 billion dollar assistance package proposed by the Reagan Administration. In August 1985 P.L. 99-83 amended Section 620E to require the President to certify to Congress that Pakistan does not possess a nuclear explosive device and that the proposed U.S. assistance will reduce significantly the risk that Pakistan will possess a nuclear explosive device before any aid to Pakistan can be furnished. The President must make this certification in each fiscal year in which aid is requested. The latest certification for FY87 was signed by President Reagan and sent to Congress on Oct. 27, 1986. This authority expires Sept. 30, 1987.

The Reagan Administration has warned Pakistan repeatedly that its nuclear activities could jeopardize U.S. aid. In April 1982 it advised Pakistan that reprocessing spent fuel would "seriously disturb" U.S.-Pakistani ties. In September 1984 President Reagan warned in a letter to President Zia that Pakistan risked losing American military assistance if the Kahuta enrichment plant enriched uranium beyond 5%. President's Zia's reply in September 1985 reportedly said that Pakistan would respect the 5% limit (Financial Times, Dec. 7, 1984: 3). In September 1985 the Administration sent high-level officials from the State Department and the National Security Council to express U.S. concern about possible development of a nuclear weapon by Pakistan and about overall tensions with India. According to the State Department, the Administration has made very clear to the highest levels of the Pakistan government the serious consequences for our relationship should Pakistan fail to exercise restraint in the nuclear area (The Washington Post, Nov. 5, 1986: A29).

Other Factors

Any Pakistan decision whether to make nuclear weapons and whether to do it openly probably will not be based exclusively on estimates of U.S. and Indian response. The continuing Soviet occupation of neighboring Afghanistan may cause some in Pakistan to argue that a nuclear capability is needed to deter Soviet military action. Pakistan has allowed Afghan resistance groups to operate out of its territory and has helped channel U.S. aid to the rebels, and the Soviet Union has warned Pakistan about these actions. Pakistan may be motivated in part by desire to enhance its prestige in the Arab world. Some Arab states might welcome an Islamic bomb in Pakistan as a counterweight to Israel's suspected nuclear arsenal. There have been reports of Arab financing of Pakistan's nuclear program.

On balance, however, these factors seem to support maintaining a posture of nuclear ambiguity. Pakistan's leaders do not wish to provoke military action against their country by the Soviet Union, India, or Iran.

An overt nuclear posture could unite India, Iran, and the Soviet Union against Pakistan. In addition, if Pakistan demonstrated or announced a nuclear weapons capability, this could evoke a preemptive strike by Israel against Pakistan's nuclear facilities similar to the 1981 Israeli air strike against an Iraqi nuclear reactor. It would certainly risk cutoff of U.S. economic and military aid.

In sum, Pakistan's incentives to practice nuclear ambiguity remain strong. By staying a short step away from making a nuclear weapon while publicly disclaiming interest in nuclear weapons, Pakistan reaps several benefits: it maintains a hedge against an Indian move to manufacture a small nuclear arsenal and gives India no excuse to resume nuclear testing; it preserves some leverage over U.S. economic and military aid without causing a cutoff; it discourages conventional attacks from neighboring countries; and it enhances Pakistan's prestige in the Arab world.

CHRONOLOGY

[NOTE: A more detailed chronology including events and statements from 1955 to 1985 is available from the author.]

09/30/87 --- Scheduled expiration of the President's authority to waive the cutoff of U.S. aid under the Symington Amendment. (Section 669 of the Foreign Assistance Act)

07/22/87 --- Washington. Members of the Senate Foreign Relations Committee notified the Reagan Administration in a closed-door meeting with Undersecretary Armacost that U.S. aid to Pakistan was seriously jeopardized by charges of Pakistani nuclear procurement. Senator Pell, Committee Chairman, has stated that, "Our record of accepting [Pakistan's] lies and transgressions has obviously sent a weak message..." He declared, "Now is the time to show Pakistan we mean business." (Washington Post, July 22, 1987: A15)

--- Washington. The Subcommittees on Asian and Pacific Affairs and on International Economic Policy and Trade received a secret briefing on the Pakistan situation by the Administration followed by an open hearing. Testimony was heard from Assistant Secretary of State for Near Eastern and South Asian Affairs Richard Murphy and Special Agent for the U.S. Customs Service David Warren.

--- Chairman Farnsworth of the House Foreign Affairs Committee wrote to the President to propose suspension of military aid to Pakistan until the two countries could resolve the issues raised by charges Pakistan has tried illegally to acquire materials for nuclear weapons.

07/21/87 --- The Senate Committee on Foreign Relations received a secret briefing on recent developments in Pakistan's nuclear program from Michael H. Armacost, Under Secretary of State for

Political Affairs, and David Warren of the U.S. Customs Service.

--- Islamabad. Senior officials acknowledged that Pakistani citizens may have been involved in attempts in the United States to smuggle illegal materials used in making nuclear weapons, but denied such efforts had the support or approval of President Zia. (The Washington Post, July 22, 1987: A15)

07/17/87 --- Sacramento. The U.S. Attorney in Sacramento announced the indictment of two Americans and a Hong Kong businessman for illegally exporting to Pakistan sophisticated instruments and advanced computer equipment that can be used to make nuclear weapons. The shipments were made between July 1982 and August 1983. (The New York Times, July 18, 1987: 3)

07/16/87 --- Karachi. The Pakistani government denied that it was involved in any way in an attempt to export a steel alloy from the United States illegally for possible use in making nuclear weapons. (Foreign Ministry statement quoted by the New York Times, July 17, 1987: A4)

07/15/87--- Washington. The United States is urgently seeking an explanation from Pakistan of an apparent effort by a Pakistani businessman to illegally export American materials for making nuclear weapons, the State Department announced. The Administration says it is premature to charge official involvement of the Pakistani government. (The New York Times, July 16, 1987: A3; The Washington Post, July 17, 1987: A22)

07/14/87 --- Washington. A Canadian citizen of Pakistani origin was arrested in Philadelphia on charges that he tried to export material to Pakistan that could be used in making nuclear weapons. (The New York Times, July 15, 1987: A1, A8; The Washington Post, July 15, 1987: A19)

--- Senator Glenn informed the Senate of the attempted illegal export and proposed that, as a minimum, no new military assistance should be provided to Pakistan unless Pakistan offers reliable assurances that it will not produce weapon-grade nuclear materials. These assurances must be verifiable. (Congressional Record, July 14, 1987: S9887)

--- Representative Solarz issued a statement calling on the President to invoke the Solarz Amendment to the Foreign Assistance Act (P.L. 99-83, Section 1204) and cut off U.S. aid to Pakistan because of this attempt to illegally export nuclear materials from the United States.

07/02/87 --- Pakistani Foreign Minister Yaqub Khan proposed a regional non-proliferation treaty to a meeting of foreign ministers of the South Asian Association for Regional Cooperation. Similar proposals have been rejected in the past by India due

to the noninclusion of China. (Nucleonics Week, July 2, 1987: 11)

- 07/--/87 --- Disagreement remained between France and Pakistan over compensation for a reprocessing plant on which the French halted work in 1978. Pakistan may be claiming up to \$300 million for breach of contract and losses incurred. French Foreign Minister Jean-Bernard Raimond has stated French willingness to build a nuclear power plant for Pakistan if settlement for compensation were agreed upon and IAEA safeguards were imposed. (Nuclear News, July 1987: 58)
- 06/04/87 --- Talks between Pakistani Foreign Minister Sahibzada Yaqub Khan, Foreign Secretary Abdul Sattar, and French Foreign Minister Jean-Bernard Raimond to settle a dispute over a reprocessing plant continued in Paris on May 27. (Nucleonics Week, June 4, 1987: 11)
- 05/14/87 --- France reported that it may help Pakistan build a new nuclear power plant if settlement is reached in talks resulting from France's failure to supply Pakistan with a reprocessing plant. That contract was cancelled in 1977. (Nucleonics Week, May 14, 1987: 1, 8)
- 05/08/87 --- Senator Glenn emphasized that Pakistan's nuclear intentions must be reviewed in light of recent reports of secret supply of enrichment parts and technology from a West German company to Pakistan. These reports raise questions about U.S. intelligence competency and the frankness of the Administration Congress regarding what the Administration already knew of Pakistan's secret supply network. (Congressional Record, May 8, 1987: S6218-S6221)
- 05/07/87 --- Mr. Jean-Bernard Raimond during his visit to Islamabad on May 7, 1987, reaffirmed the French Government's will to find a solution to the French-Pakistani dispute over the 1978 halt of shipment of a reprocessing plant from France to Pakistan. Once this dispute is settled, France will consider resuming civilian nuclear cooperation with Pakistan.
- 05/04/87 --- The Cologne prosecutor's office has begun an investigation of the West German company Leybold Heraeus and its factory outside Frankfurt. The company is suspected of illegally exporting plans that may have helped Pakistan build its uranium enrichment plant. Pakistan's ambassador to West Germany, Abdul Waheed, described the reports as "cock and bull stories," which are "smearing Pakistan's name." (The New York Times, May 5, 1987: A8)
- 04/24/87 --- The Senate Foreign Relations Committee voted 11-8 not to penalize Pakistan for what U.S. intelligence has reported to be a nearly successful drive to acquire nuclear weapons. The House Foreign Affairs Committee had previously voted to warn Pakistan that developing nuclear weapons would have an

adverse effect on relations with the United States, but neither the House nor Senate committees voted to cut foreign aid to Pakistan based on non-proliferation concerns. (The Washington Post, Apr. 24, 1987: A1, A18)

- 04/02/87 --- Pakistani President Zia told the diplomatic corps in Islamabad that Pakistan has deliberately and unilaterally discarded the nuclear weapons option and "has not made a bomb, is not working on it, nor has any intentions to build it". (Nucleonics Week, Apr. 2, 1987: 11)
- 03/30/87 --- Time magazine reported that in an interview President Zia said: "Pakistan has the capability of building the Bomb. You can write today that Pakistan can build a bomb whenever it wishes. Once you have acquired the technology, which Pakistan has, you can do whatever you like." He also said Pakistan had neither the intention nor the desire to do so, and that Pakistan has not enriched uranium above the normal grade for peaceful purposes. (Time, Mar. 30, 1987: 42)
- 03/23/87 --- Senator Glenn in testimony before the Senate Foreign Relations Committee asked that Congress, in approving a 6-year extension of foreign aid to Pakistan for FY88, require the President to annually certify that Pakistan is not producing nuclear weapons grade material. The certification would be verified by on-site inspections by designated U.S. representatives, or any other technical means the United States finds acceptable.
- The House Committee on Foreign Relations, Subcommittee on Near Eastern and South Asian Affairs, concluded hearings on S. 720, authorizing funds for FY88 for foreign assistance programs, focusing on funds for the Near East and South Asia.
- 03/22/87 --- Representative Solarz proposed that U.S. aid to Pakistan be authorized for the full 6 years requested but that the waiver of the Symington amendment -- which would cut off this aid -- be extended for only 2 years. (The Washington Post, Mar. 22, 1987: C7)
- Pakistan President Zia called for a nuclear weapons free South Asia discussion with India. He denied that Pakistan is developing nuclear bombs, and called for nuclear dialogue. He again denied that Pakistan has or is trying to build a nuclear bomb but said that Pakistan was determined to go ahead with its atomic energy program despite growing international concern that it is being used to develop nuclear weapons. (The Washington Post, Mar. 22, 1987: A15, A29)
- 03/19/87 --- Islamabad. American pressure on Pakistan to stop developing a nuclear bomb has provoked objections throughout the country and raised doubts among some about the reliability of Washington as a friend. Also U.S. Ambassador Hinton, who

warned Pakistan about its nuclear activities (see 02/16/87), has been widely denounced in Parliament and in the newspapers. (Steven R. Weisman, The New York Times, Mar. 22, 1987: 15)

- 03/12/87 --- Pakistan. Syed Mushahid Hussain, editor of the Muslim, a popular English language newspaper, and said to favor the pro-bomb lobby in Pakistan, has backed the Indian journalist's version of the interview with A.Q. Khan (below.) (Nucleonics Week, Mar. 12, 1987: 13)
- 03/05/87 --- Senator Glenn wrote to President Reagan that in his view "all the components and means for assembling a working nuclear explosive device are in Pakistan's possession." He urged the President to immediately undertake a review of the situation in South Asia including reexamination of U.S. information about Pakistan's nuclear program, and that U.S. military assistance be suspended during this review. Also assistance should not be restarted until the President has received reliable assurances from Pakistan that it has ceased producing nuclear explosive materials.
- 03/08/87 --- Islamabad. Pakistan's Minister of State for Foreign Affairs, Zain Moorani, said to its National Assembly that Pakistan would continue peaceful development of nuclear energy and would not bow to pressure from foreigners who fear it may be building atomic bombs. (AP report quoted in the New York Times, Mar. 9, 1987: A2)
- Washington. The Washington Post quoted a State Department official as saying "We think they [Pakistanis] have the capability of producing one [nuclear bomb] now, but we're convinced they don't have one yet." (The Washington Post, Mar. 8, 1987: A28)
- 03/05/87 --- Washington. The Senate Committee on Government Affairs held a hearing on effects of the spread of nuclear weapons. Richard N. Perle, Assistant Secretary of Defense, cautioned it might be counterproductive to cut off U.S. aid to Pakistan since this might induce Pakistan to pursue its weapons interests with even more vigor. (The New York Times, Mar. 6, 1987: A3; The Washington Post, Mar. 6, 1987, A29; Nuclear Fuel, Mar. 9, 1987: 1, 2)
- Washington. The House Committee on Foreign Affairs, Subcommittee on Asian and Pacific Affairs, held a hearing on foreign aid request for Pakistan.
- 03/02/87 --- London. The Financial Times reported that Dr. A. Q. Kahn had denied the report in the London Observer that he had made any claim about Pakistan having a bomb or weapons-grade uranium or plutonium. (The Financial Times [London] Mar. 2, 1987: 2)

- 03/01/87 --- New Delhi. News reports of an interview with Abdul Qadeer Kahn, head of Pakistan's nuclear research, by an Indian journalist who quoted Kahn as saying Pakistan possessed a nuclear bomb. (The Observer (London), Mar. 1, 1987; also the New York Times, Mar. 2, 1987)
- 02/16/87 --- Islamabad. U.S. Ambassador Hinton in a speech at Pakistan's Institute of Strategic Studies warned about Pakistan's nuclear activities and cautioned that it was "open to question" whether the President could again certify to Congress that Pakistan had no nuclear explosive devices if he were to conclude that "Pakistan had in hand, but not assembled, all the needed components for a nuclear explosive device." (The New York Times, Feb. 20, 1987: A3)
- 01/01/87 --- Islamabad. Indian Foreign Secretary Venkate Swaran told reporters of "very good progress" on negotiations of an agreement not to attack each other's nuclear installations. (Nucleonics Week, Jan. 1, 1987: 12)
- 11/04/86 --- Washington. The Washington Post said that according to intelligence reports, Pakistan has enriched uranium to 93.5% and also has detonated high explosive devices as part of a continuing effort to build an implosion type nuclear weapon. (The Washington Post, Nov. 4, 1986: A1)
- 11/04/86 --- Islamabad. Top-ranking Pakistani officials rejected reports that it was developing weapons-grade uranium and a triggering mechanism for a nuclear device. According to Foreign Secretary Abdul Sattar, Pakistan's research aims at developing a low-level fuel-grade enrichment capability for its proposed Chashma nuclear power project. "While some progress has been made in that direction, the enrichment level has remained well within limits of the research and development program for fuel." (The Washington Post, Nov. 5, 1986: A29)
- 10/27/86 --- Washington. President Reagan sent to Congress his certification that Pakistan does not possess a nuclear explosive device and that proposed U.S. assistance for FY87 will reduce significantly the risk that Pakistan will possess such an explosive.
- 09/15/86 --- Beijing. Pakistan and PRC signed a comprehensive agreement for peaceful nuclear cooperation covering the design, construction and operation of research and power reactors; but specifying the cooperation is solely for peaceful purposes and not for the development of any explosive devices for military purposes. In Washington, a Reagan Administration official said it is still U.S. policy to discourage other countries from having any significant nuclear cooperation with Pakistan until it places all of its nuclear facilities under IAEA safeguards. (Nuclear Fuel, Sept. 22, 1986: 9)

- 09/10/86 --- India's Prime Minister Rajiv Gandhi charged that Pakistan "is continuing a program to build nuclear weapons and the United States is doing nothing to prevent it." (The Washington Post, Sept. 12, 1986: A25)
- 07/31/86 --- Islamabad. Upon returning from his trip to the United States and Europe, Pakistani Prime Minister Muhammed Khan Junejo announced that French Prime Minister Jacques Chirac and he had decided to end the dispute over France's 1974 contract to supply Pakistan with a reprocessing plant. (Nucleonics Week, July 31, 1986: 8)
- 07/16/86 --- Washington. Visiting Pakistani Prime Minister Junejo denied that his country is developing nuclear weapons. Meeting with the Senate Foreign Relations Committee, he reportedly said that whatever nuclear work is going forward is for civil purposes and to meet the needs of a developing country, and that Pakistan is abiding by U.S. guidelines. (The Washington Post, July 17, 1986: A21)
- 07/15/86 --- The Soviet Union warned Pakistan about its nuclear activities in direct and tough terms. The Reagan Administration responded with a private message to Moscow reiterating the strong U.S. commitment to Pakistan's security. (The Washington Post, July 17, 1986: A8)
- 06/15/86 --- A senior U.S. official reaffirmed President Reagan's certification of October 1985 that Pakistan "does not possess a nuclear device" and said that "we see no reason at this time to change our conclusion." This White House statement followed published reports quoting U.S. intelligence sources as saying Pakistan had produced 30% enriched uranium. (The Washington Times, July 16, 1986: 6C)

FOR ADDITIONAL READING

- Crawford, Mark. Pakistan thought to possess atomic bomb. Science, Mar. 6, 1987, p. 1131.
- Spector, Leonard. The new nuclear nations. Carnegie Endowment. New York, Vintage Books, 1985.
- Nuclear proliferation today. Carnegie Endowment. Cambridge, Ballinger Publishing Company, 1984.
- Going nuclear. The spread of nuclear weapons 1986-1987. Cambridge, Ballinger Publishing Co., 1987.